

REMARKS

Applicant has carefully reviewed the Office Action of January 26, 2005, and offers the following remarks to accompany the above amendments.

Initially, Applicant amends paragraph 0040 of the specification to provide the current identification information about the patent application discussed in paragraph 0040. No new matter is added.

The Patent Office opines that the claims are not numbered in accordance with 37 C.F.R. § 1.126 and indicates that claims 17-33 have been renumbered claims 18-34. Applicant appreciates the Patent Office pointing this out. The confusion comes from the fact that there are two pages 27 in the application as filed. Applicant herein cancels claim 17 as it was unintentionally introduced into the application. Applicant has amended claims 19-32 to change their dependency to claim 18.

In light of the above, the lettering and noun issues of claim 17 discussed in paragraph 2 of the Office Action are moot.

Claims 1, 2, 18 and 19 were rejected under 35 U.S.C. § 103 as being unpatentable over EP 0367932 (hereinafter "Gockler") in view of U.S. Patent 6,522,747 (hereinafter "Reilly"). Applicant respectfully traverses. For the Patent Office to combine references in an obviousness analysis, the Patent Office must do two things. First, the Patent Office must articulate a motivation to combine the references, and second, the Patent Office must support the articulated motivation with actual evidence. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). While the range of sources for the motivation is broad, the range of available sources does not diminish the requirement for actual evidence. *Id.* Once the Patent Office has properly combined the references, to establish *prima facie* obviousness, the Patent Office must still show where each and every claim element is shown. MPEP § 2143.03.

Applicant initially notes that the Patent Office has not properly supported the motivation to combine the references with the requisite evidence. Specifically, the Patent Office opines that the motivation to combine Gockler and Reilly would be "to employ its use in the creation of an output signal. . ." where "it" is a polyphase decomposition of filter coefficients. The Patent Office's motivation lacks the requisite evidence in support thereof. Since the motivation is not properly supported, the motivation is improper. Since the motivation is improper, the

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combination of references is improper. Since the combination of references is improper, the rejection is not properly presented, and the claims are allowable.

Even if the combination is proper, a point which Applicant does not concede, the combination does not teach or suggest all the claim elements. Specifically, claims 1 and 18 both recite "a combined time invariant finite impulse response (FIR) filter and a time variant FIR filter. . . ." The Patent Office opines that this element is taught by Gockler at page 7, lines 18-22. Applicant respectfully traverses this assertion.

Gockler does not discuss the combining of a time-invariant filter and a time variant filter. While Gockler does state that "the complex multiplier is combined with the filter of the preceding cascade stage" at Gockler page 7, lines 18-19, this combination creates a time-variant filter, but not a time-variant filter combined with a time-invariant filter as recited in the claims. Proof of this fact is readily seen in the next sentences of Gockler which describe the filters as separate filters. "[T]his preceding filter No. 1 is thus time-variant and the subsequent filters No. 2 through 6 are time-invariant, having real coefficients." Gockler, page 7, lines 19-21. By distinguishing the time-variant filters from the time-invariant filters, Gockler confirms that the filters are not combined as recited in claims 1 and 18.

Applicant further notes that claims 1 and 18 both recite the "calculate each filter coefficient for a combined time invariant finite impulse response (FIR) filter and time variant FIR filter . . . ." The Patent Office opines that the calculating portion is taught at Gockler page 4, lines 6-9. However, the calculations described at Gockler, page 4, lines 6-9 are for a half bandpass filter, not the combined time-variant and time-invariant filter of the claims.

Likewise, the storage of the coefficients described on Gockler, page 7, lines 6-9 is also relating to the half bandpass filter, and not to the time variant and time invariant filters described later in Gockler. The relation of the storage to the half bandpass filter is readily seen at Gockler, page 7, line 5, which describes the coefficients as changing sinusoidally, which would occur in the half-bandpass filter and not the time variant and time invariant filters described later in Gockler.

For these three reasons, Gockler does not show the element for which it is cited. The Patent Office has pointed to nothing in Reilly which cures the deficiencies of Gockler. Thus, in combination, the two references do not teach or suggest these claim elements. Since the combination does not teach these claim elements, the Patent Office's combination does not

establish *prima facie* obviousness. Since the combination does not establish obviousness, the claims are allowable. Claims 2 and 19 depend from claims 1 and 18, and are patentable at least for the same reasons.

Applicant further notes that the proposed combination does not realize the advantages of Applicant's invention. That is, Applicant's invention maximizes the savings in terms of computational complexity by applying the polyphase decomposition to the combined filter. In contrast, because Gockler does not show a combined filter, the polyphase decomposition can only be applied to one of his filter stages. As a result, the savings in computation requirements only inures to one of the filters and there remains a computationally intense filter. Thus, the savings achieved are minimal compared to Applicant's invention.

Claims 4 and 21 were rejected under 35 U.S.C. § 103 as being unpatentable over Gockler in view of Reilly, and further in view of U.S. Patent 5,02,762 (hereinafter "Lynn"). Applicant respectfully traverses. The standards for establishing obviousness are set forth above.

Applicant initially traverses the rejection for the reasons articulated above. That is, Gockler and Reilly do not establish obviousness for the independent claims. The addition of Lynn does not cure these deficiencies. For this reason, the rejection does not establish obviousness for the claims, and claims 4 and 21 are allowable.

Applicant further traverses the rejection because the Patent Office has not provided the requisite evidence to support the motivation to combine Lynn. Specifically, the Patent Office opines that the motivation to combine the references is "to use a higher sampling rate at the output of a combined FIR filter in order to obtain higher accuracy and efficiency." This motivation is unsupported by any evidence. As such, this motivation is improper. Since the motivation is improper, the combination is improper, and the rejection is not properly supported. Since the rejection is not properly supported, claims 4 and 21 are allowable for this reason as well.

Claims 5 and 22 were rejected under 35 U.S.C. § 103 as being unpatentable over Gockler as applied to claim 1, and further in view of U.S. Patent Application Publication 2002/0051503 (hereinafter "Takahiko"). Applicant respectfully traverses. The standard for establishing obviousness is set forth above.

Applicant initially notes that Reilly is not recited in the rejection although Reilly was required in the analysis of claim 1. Therefore, Applicant proceeds as if Reilly had been cited. If

the Patent Office meant not to cite Reilly, Applicant requests clarification from the Patent Office as to this fact.

Applicant initially traverses the rejection for the reasons set forth above relating to Gockler and Reilly. The addition of Takahiko does not cure these deficiencies. For this reason, the rejection does not establish obviousness for claims 5 and 22.

Further, the Patent Office has not provided the requisite evidence to support the motivation to combine Takahiko. Specifically, the Patent Office opines that the motivation to combine the references is "to produce filter calculations at a lower sampling rate." This motivation is unsupported by any evidence. As such, this motivation is improper. Since the motivation is improper, the combination is improper, and the rejection is not properly supported. Since the rejection is not properly supported, claims 5 and 22 are allowable.

Applicant requests reconsideration of the rejections in light of the amendments and remarks presented herein. The Patent Office has not supported the various motivations to combine the references, and the references do not teach the combined filter of the claims. Applicant earnestly solicits claim allowance at the Examiner's earliest convenience.

Respectfully submitted,

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